RUST GEOTECH INC.

Spectral Gamma-Ray Borehole
Log Data Report

Borehole 22-02-09

Log Event A

Borehole Information

Farm : BY	**Tank :** BY-102	**Site Number :** 299-E33-102
N-Coord : 46,005	**W-Coord :** 53,291	**TOC Elevation :** 649.39
Water Level, ft :	**Date Drilled :** 9/2/1970	

Casing Record

Type : Steel-welded	Thickness : 0.280	ID, in. : 6
Top Depth, ft. : 0	Bottom Depth, ft. : 100	

Borehole Notes:
The drilling log for borehole 22-02-09 indicates the borehole was not perforated, cemented, or modified significantly. Samples collected from 26 to 51 ft indicated contamination.

Equipment Information

Logging System : 2	**Detector Type :** HPGe	**Detector Efficiency:** 35.0 %
Calibration Date : 03/1995	**Calibration Reference :** GJPO-HAN-1	**Logging Procedure :** P-GJPO-1783

Log Run Information

Log Run Number : 1	**Log Run Date :** 7/24/1995	**Logging Engineer:** Steve Kos
Start Depth, ft.: 0.0	**Counting Time, sec.:** 100	**L/R :** L **Shield :** N
Finish Depth, ft. : 99.5	**MSA Interval, ft. :** 0.5	**Log Speed, ft/min.:** n/a

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Analysis Information

Analyst : P.D. Henwood

Data Processing Reference : P-GJPO-1787 Analysis Date : 1/23/1996

Analysis Notes :

This borehole was logged in one log run. The pre- and post-survey field verification spectra showed consistent activities, indicating the logging system operated properly during data collection. Energy calibrations differed because of gain drift in the instrumentation. Gain drifts during data collection necessitated minimal energy versus channel number recalibrations during processing of the data to maintain proper peak identification. No depth overlaps occurred because the borehole was logged in only one log run.

The casing thickness is 5/16 (0.3125) inch. Casing-correction factors for a 0.33-in.-thick steel casing were applied during analysis, which results in an almost negligible over-estimation of the radionuclide concentrations.

Cs-137, Co-60, and possibly Sr-90 were the only man-made radionuclide identified in this borehole. Cs-137 was measured almost continuously from ground surface to TD. The presence of Co-60 was measured at discontinuous locations from 23 to 66 ft. Sr-90 is indicated at about 23 and 47 ft, where elevated low-energy count rates are apparent.

Additional information and interpretations of log data are included in the main body of the Tank Summary Data Report for tank BY-102.

Log Plot Notes:

Separate log plots show the man-made (e.g., Cs-137) and the naturally occurring radionuclides (K-40, U-238, and Th-232). The natural radionuclides can be used for lithology interpretations. The headings of the plots identify the specific gamma rays used to calculate the concentrations.

A combination plot includes both the man-made and natural radionuclides, in addition to the total gamma derived from the spectral data and the Westinghouse Hanford Company (WHC) Tank Farms gross gamma log. The gross gamma plot displays the latest available digital data from WHC with no attempt to adjust the depths to coincide with the SGLS data.

Uncertainty bars on the plots show the statistical uncertainties for the measurements as 95-percent confidence intervals. Open circles on the plots give the minimum detection level (MDL). The MDL of a radionuclide represents the lowest concentration at which positive identification of a gamma-ray peak is statistically defensible.